What is claimed is:

1.   A fuel injection control method for detecting an actual current integral of a coil current that flows through a fuel injection solenoid after starting driving

5   of the solenoid, and based on the actual current integral, controlling driving of the solenoid.

2.   A fuel injection control method comprising the steps of:

starting driving of a fuel injection solenoid;

10   detecting an actual current integral of a coil current that flows through the solenoid after starting the driving of the solenoid;

comparing the actual current integral with a reference current integral beforehand set in relation

15   to a driving pulse width for the solenoid corresponding to a required fuel injection amount; and

correcting the driving pulse width for the solenoid based on comparison between the actual current integral and the reference current integral,

20   wherein the driving of the solenoid is controlled based on the driving pulse width corrected.

3.   A fuel injection control method comprising the steps of:

starting driving of a fuel injection solenoid;

25   detecting an actual current integral of a coil current that flows through the solenoid after starting the driving of the solenoid;

comparing the actual current integral with a reference current integral beforehand set in relation to a driving pulse width for the solenoid corresponding to a required fuel injection amount; and

5   halting the driving of the solenoid at the time the actual current integral reaches the reference current integral.

4.   A fuel injection control method comprising the steps of:

10   starting driving of a fuel injection solenoid;

detecting an actual current integral of a coil current that flows through the solenoid after starting the driving of the solenoid;

comparing the actual current integral with a target

15   current integral beforehand set in relation to a required fuel injection amount; and

correcting a driving pulse width for the solenoid based on comparison between the actual current integral and the target current integral,

20   wherein the driving of the solenoid is controlled based on the driving pulse width corrected.

5.   A fuel injection control method comprising the steps of:

starting driving of a fuel injection solenoid;

25   detecting an actual current integral of a coil current that flows through the solenoid after starting the driving of the solenoid;

comparing the actual current integral with a target current integral beforehand set in relation to a required fuel injection amount; and

halting the driving of the solenoid at the time the
5   actual current integral reaches the target current integral.

6.   A fuel injection control method comprising the steps of:

starting driving of a fuel injection solenoid;
10   detecting an actual current integral of a coil current that flows through the solenoid after starting the driving of the solenoid;

calculating an estimated fuel injection amount corresponding to the actual current integral;
15   comparing the estimated fuel injection amount with a required fuel injection amount; and

correcting a driving pulse width for the solenoid based on comparison between the estimated fuel injection amount and the required fuel injection amount,
20   wherein the driving of the solenoid is controlled based on the driving pulse width corrected.

7.   A fuel injection control method comprising the steps of:

starting driving of a fuel injection solenoid;
25   detecting an actual current integral of a coil current that flows through the solenoid after starting the driving of the solenoid;

calculating an estimated fuel injection amount corresponding to the actual current integral;

comparing the estimated fuel injection amount with a required fuel injection amount; and

5   halting the driving of the solenoid at the time the estimated fuel injection amount reaches the required fuel injection amount.

8.   The fuel injection control method according to any one of claims 1 to 7, further comprising the step of:

10   resetting the actual current integral every driving cycle of the fuel injection solenoid.

9.   A fuel injection control apparatus comprising:

driving means for driving a fuel injection solenoid;

detecting means for detecting an actual current

15 integral of a coil current flowing through the solenoid; and

control means for controlling driving of the solenoid based on the actual current integral.

10.   The fuel injection control apparatus according to

20 claim 9, wherein the control means comprises:

comparing means for comparing the actual current integral obtained after starting driving of the solenoid detected in the detecting means with a reference current integral beforehand set in relation to a driving pulse

25 width for the solenoid corresponding to a required fuel injection amount; and

correcting means for correcting the driving pulse

width for the solenoid based on a result of comparison in the comparing means.

11. The fuel injection control apparatus according to claim 9, wherein the control means comprises comparing means for comparing the actual current integral obtained after starting driving of the solenoid detected in the detecting means with a reference current integral beforehand set in relation to a driving pulse width for the solenoid corresponding to a required fuel injection amount, and halts the driving of the solenoid by the driving means at the time the actual current integral reaches the reference current integral.

12. The fuel injection control apparatus according to claim 9, wherein the control means comprises:

comparing means for comparing the actual current integral obtained after starting driving of the solenoid detected in the detecting means with a target current integral beforehand set in relation to a required fuel injection amount; and

correcting means for correcting a driving pulse width for the solenoid based on comparison between the actual current integral and the target current integral.

13. The fuel injection control apparatus according to claim 9, wherein the control means comprises comparing means for comparing the actual current integral obtained after starting driving of the solenoid detected in the detecting means with a target current integral beforehand

set in relation to a required fuel injection amount, and halts the driving of the solenoid by the driving means at the time the actual current integral reaches the target current integral.

5   14.   The fuel injection control apparatus according to claim 9, wherein the control means comprising:

calculating means for calculating an estimated fuel injection amount corresponding to the actual current integral obtained after starting driving of the solenoid;

10   comparing means for comparing the estimated fuel injection amount with a required fuel injection amount; and

correcting means for correcting a driving pulse width for the solenoid based on comparison between the

15   estimated fuel injection amount and the required fuel injection amount.

15.   The fuel injection control apparatus according to claim 9, wherein the control means comprises:

calculating means for calculating an estimated fuel

20   injection amount corresponding to the actual current integral obtained after starting driving of the solenoid; and

comparing means for comparing the estimated fuel injection amount with a required fuel injection amount,

25   and halts the driving of the solenoid by the driving means at the time the estimated fuel injection amount reaches the required fuel injection amount.

16.   The fuel injection control apparatus according to claim 9, wherein the detecting means for detecting the actual current integral is an analog detecting circuit that detects a cumulative current value of the coil current or a digital detecting circuit that measures a value of the coil current at predetermined intervals to calculate.